

1. A digital data system comprising

a link that carries message packets,

5 a first node sending a plurality of message packets to a second node on the link,

the second node returning a control symbol to the first node for each packet received
on the link, and

10 the first node responding to the control symbol to control the further transmission of
message packets to the second node over the link.
2. A digital data system according to claim 1, wherein the first node sends the plurality
of message packets to the second node as a sequence.
- 15 3. A digital data system according to claim 2, wherein

the first node sends each of the message packets with a sequence identifier and

20 the second node returns a control symbol with the sequence identifier of a received
message packet.
4. A digital data system according to claim 3, wherein the second node returns a packet-
not-accepted control symbol to the first node indicating receipt on the link of a
25 message packet that is out of sequence.
5. A digital data system according to claim 4, wherein the first node responds to a
packet-not-accepted control symbol by re-sending a portion of the sequence of
message packets.
- 30 6. A digital data system according to claim 5, wherein the first node queries the second
node for an identifier of a message packet in the sequence with which to begin re-
sending.

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7. A digital data system comprising
- 5 a link that carries message packets,
- a first node sending a plurality of message packets to a second node on the link,
- the second node returning a control symbol to the first node for each packet received on the link, the control symbol indicating a packet error, and
- 10 the first node responding to the control symbol to control the further transmission of message packets to the second node over the link.
8. A digital data system according to claim 7, wherein the control symbol specifies
- 15 identity of a received packet having an error condition.
9. A digital data system according to claim 7, wherein the control symbol identifies the type of packet error.
- 20 10. A digital data system according to claim 7, wherein the sending node transmits a message packet comprising a header portion and a data portion, at least said data portion including an error code, and wherein the second node applies said error code to detect the packet error.
- 25 11. A digital data system according to claim 7, wherein the sending node transmits a message packet comprising a header portion followed by a data portion, and
- the second node inspects at least a portion of the header portion to detect a first error condition,
- 30 passing a symbol over the link to the first node to initiate retransmission when it detects the first error condition.

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12. A digital data system according to claim 7, wherein the sending node is configured to transmit message packets of a first size including an initial number of bytes, and of a second size including a further number of bytes, and wherein
- 5 a receiving node applies a first error code to the initial number of bytes
- whereby corruption of an initial portion of a packet is quickly detected without reference to a subsequent portion of the packet
- 10 13. A digital data system according to claim 12, wherein
- when a further number of bytes appear in the message packet, the receiving node applies a second error code to the further number of bytes.
- 15 14. A digital data system comprising
- first and second nodes connected by a first link,
- the first node sending a plurality of message packets to the second node over the first
- 20 link, each message packet including an error code
- the second node checking the error code and sending a valid message packet to a further node over a further link,
- 25 wherein the message packet includes a header portion and further portion
- at least a part of the header portion being a changeable part that may change as the message packet passes from the first link to the further link, and at least a part of the message packet being an invariant part that does not change
- 30 whereby the error code need not be recalculated when the message packet passes to the further link.

15. A digital data system according to claim 14, wherein the changeable part includes a sequence identifier, and the second node compares the changeable part of a message packet with an expected sequence identifier to detect an error.
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16. A digital data system comprising
- first and second nodes connected by a first link,
- 10 the first node sending a data from a buffer as a transmission sequence of one or more messages to the second node over the first link, each message including a sequence identifier in an initial portion of the message
- the second node checking the initial portion to identify a faulty message reception
- 15 and communicating said sequence identifier to the first node with a symbol indicating whether reception was proper such that the sending node may respond to the symbol by clearing the buffer or retransmitting at least a portion of the transmission sequence.
- 20 17. A digital data system comprising
- first and second nodes connected by a first link,
- the first node sending a plurality of message packets to the second node over the first
- 25 link,
- the second sending the message packets to a further node over a further link,
- the second node returning a control symbol to the first node for each packet received
- 30 therefrom the link,

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the first node responding to control symbol to control the further transmission of message packets to the second node over the link,

5 such that transmission of data packets from the first node to the further node proceeds efficiently.